

Sika[®]-Waterbars


PVC Waterstop



Description	Flexible PVC waterbars (thermoplastic) to seal construction and expansion joints in concrete structures. Sika-Waterbars are available in different sizes and types, depending on their use.
Use	Sika-Waterbars are used to seal construction and expansion joints in water retaining structures such as reservoirs, water towers, dams, spillways, canals, swimming pools, sewage tanks etc. as well as to keep water out of concrete structures such as basements, underground car parks, tunnels, subways, retaining walls etc.
Advantages	<ul style="list-style-type: none"> - Multi rib sections of the tortuous path principle - High quality PVC for long durability - Easy to install (clip fastening) - Factory welded junction pieces available - Suitable for high water pressure - Easy to weld on site - Many different sizes and types available, depending on their use - Oil and bitumen resistant as well as reinforced types on request
Specifications	<p>Sika PVC Waterstops have been tested in accordance to:</p> <ul style="list-style-type: none"> - U.S. Corps of Engineers; Specification CRD-C 572-74 - Requirement of BS 2571 and BS 2782 - DIN 18 541 (Part 2) - ASTM D 2628 - J.I.S. Japanese Imperial Standard

Technical Data

Type	Polyvinyl Chloride (PVC)	
Color	O Type: Yellow V Type: Grey	
Density	Approx. 1.3 kg/l	
Shore A hardness	78 - 85	
Service temperature	-35°C to +55°C	
Tensile strength	> 14.2 N/mm ² ± 5% (ASTM D 412 & DIN 18 541, Part 2)	
Elongation at break	> 350% (ASTM D 412 & DIN 18 541, Part 2)	
Absorption	< 0.1%	
Chemical resistance	Permanent	Water, seawater and sewage.
	Temporarily	Diluted inorganic alkalis, mineral acids and mineral oils.
Alkali resistance	Passed CRD-C 572-65, US Corps of Engineers	
Welding temperature	Approx. 200°C	
Shelf life and storage	5 years from date of production if stored in cool conditions protected from UV light.	
Packaging	15 m rolls 30 m rolls	

	Uses	Type	Width cm	Roll length m	Nominal thickness mm (±10%)	Max. water- head in m
For construction joints	Centrally placed Waterbars Installation in the centre of concrete structures. Easy anchoring of waterstops to reinforcement with special fixing clips.	V-15 M	15	30	5	5
		V-20 L	20	30	4	10
		V-20 M	20	30	6	15
		 V-23 T	23	15	10	27
		V-24 L	24	30	4	15
		V-24 M	24	30	6.5	25
		V-32 L	32	15	4.5	25
		V-32 M	32	15	7	30
For expansion joints	Max. 20 mm expansion and 10 mm shear movement	O-20 L	20	15	2.2	10
		O-20 M	20	15	5	15
		O-23 T	23	15	10	27
		O-25 L	25	15	2.4	15
		O-25 M	25	15	6	25
		O-32 L	32	15	3	25
		O-32 M	32	15	7	30
For expansion joints	Max. 40 mm expansion and 30 mm shear movement	M-23 L	23	15	4	10
		M-25	25	15	2.5	10
		M-35 L	35	15	5	25
Construction joints	Surface Waterbars Installation on the surface of concrete structures	AR-18*	20	15	3.5	5
		AR-24*	25	15	3.5	10
		AR-28	28	15	3.5	15
		AR-31	31	15	4.0	15
Expansion joints	Max. 10 mm expansion / 5 mm shear movement (19/25)	DR-19*	21	15	3.5	5
		DR-25*	26	15	3.5	5
		DR-27	28	15	3.5	15
		DR-32	31	15	4.0	15
Expansion joints	Joint finishing type Installation by pushing onto joint lining or onto formwork board.	FA 2-5	2 / 5	25	approx. 3	0
		FA 3-10	3 / 10	25	approx. 5	5
		FA 3-14	3 / 14	25	approx. 5	5

Bitumen and Oil Resistant Waterbars (Green B-Types) available on request

* only with four pins

Application

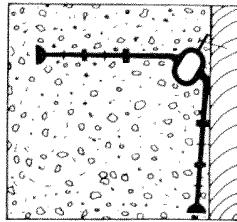
Guidelines

The selection of a suitable waterbar is governed by the type of joint, concrete thickness, grade of concrete, reinforcement position, expected movement (expansion/shear) as well as waterhead to which it is to be exposed to.

Normally the following guidelines can be applied:

- The overall width of the waterbar should be little less or equal to the thickness of the concrete slab into which it is placed.
- The overall width of the waterbar should be at least 6 times the size of the largest aggregate used.
- For optimum results, centrally placed waterbars are preferred.

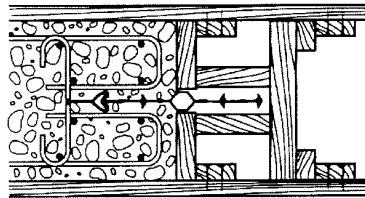
Centrally placed Waterbars



Fixing to reinforcement

Normally, approx. 3 fixing clips per meter are attached to the ends of the Waterbar. The fixing clips simplify the fixation of Waterbars to the reinforcement.

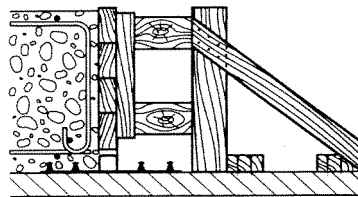
A 1-part unsplit formwork may be used for fixing to the formwork.



Fixing to formwork

A 2-part (split) formwork may be used (preferred). In this method, allow one half of the Waterbar to jut out while the other half will be casted. This Waterbar is clamped between the formwork.

Externally placed Waterbars

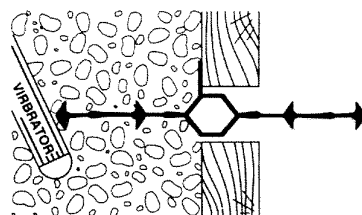


Fixing to slab

Place the Waterbar flat on the lean concrete or base of the structure. The formwork for the stopends will terminate in the middle of the Waterbar, allowing one half of the Waterbar to be casted while the other half be exposed to receive the next casting.

Notes: When working with expansion where there is a central bulb (either centrally or externally placed), it is important that the bulb should not be casted into the concrete but remains exposed (free).

Placing concrete - First stage



The Waterbar performs its function only if both sides are well embedded in the concrete. Avoid formation of honeycombs by vibrating carefully, particularly with horizontal Waterbars.

The consistency of the concrete itself should be neither too plastic nor too stiff, and the aggregate must be well graded.

Placing of fresh concrete near the Sika-Waterbar requires care, as otherwise it will be forced from its position by the pressure of the fresh concrete, i.e. the ends will fold up. To prevent this, the same concrete pressure must be present on both sides of the Waterbar.

Placing concrete - Second stage

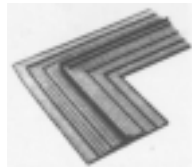
Removal of formwork in the neighborhood of Sika-Waterbar must be done with care.

The end of the Waterbar should be thoroughly checked for honeycombing on the stopend and repaired if necessary. It must also be cleaned of all hardened concrete remnants adhering from the first concrete stage. Further procedure is similar to the first stage.

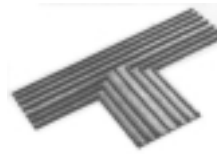
Welding Sika Waterbars are made from thermoplastic PVC and can therefore be welded easily. The ends are secured in a welding jig (available for each type) and heated with suitable welding equipment (also available), until an even, molten bead of PVC appears. The welding equipment is then removed and the molten ends pressed together firmly.

Junction pieces A wide range of standardized junction pieces are available. All have a 30 cm free wing, allowing easy butt-welding at site. In case of non-standard types, drawings must be provided, giving exact details of angles and length of wings.

Types of junctions



L-piece, flat



T-piece, flat



Cross piece flat

L-piece, vertical
(pins inside or outside)

T-piece, vertical



Cross piece, vertical

Safety

Precautions Welding should only take place at well ventilated areas or while wearing an oxygen-mask.

Ecology Can be disposed of according to local regulations.

Toxicity Non-toxic under the relevant Swiss Health and Safety Codes.

Transport Non-hazardous

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.



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